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10/088647

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Dated 12 SEP 2000

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21SEP99 E478169-1 D00022
01/7700 0.00 9922238.2

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Request for grant of a patent

(See the notes on the back of this form. You can also get an explanatory leaflet from the Patent Office to help you fill in this form)

The Patent Office

Cardiff Road
Newport
Gwent NP9 1RH

1. Your reference

TJF/JY/31796

2. Patent application number
(The Patent Office will fill in this part)

20 SEP 1999 **9922238.2**

3. Full name, address and postcode of the or of each applicant *(underline all surnames)*

WESTWIND AIR BEARINGS LTD.,
HOLTON ROAD
HOLTON HEATH
POOLE
DORSET
BH16 6LN

Patents ADP number *(if you know it)* 6348536001

If the applicant is a corporate body, give the country/state of its incorporation

UNITED KINGDOM

4. Title of the invention

MANUFACTURE OF DATA STORAGE DEVICES

5. Name of your agent *(if you have one)*

fJ CLEVELAND

"Address for service" in the United Kingdom to which all correspondence should be sent *(including the postcode)*

40-43 CHANCERY LANE
LONDON
WC2A 1JQ

Patents ADP number *(if you know it)*

07368855001 ✓

6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and *(if you know it)* the or each application number

Country	Priority application number *(if you know it)*	Date of filing *(day / month / year)*

7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application

Number of earlier application	Date of filing *(day / month / year)*

8. Is a statement of inventorship and of right to grant of a patent required in support of this request? *(Answer 'Yes' if:*

a) any applicant named in part 3 is not an inventor, or
b) there is an inventor who is not named as an applicant, or
c) any named applicant is a corporate body.
See note (d))

YES

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The Patent

Manufacture of data storage devices

This invention relates to the manufacture of data storage devices such as magnetically and optically written discs. Examples are hard and floppy magnetic discs as used in personal computers where the data is written in magnetically as well as CD ROMs which normally have data written in optically, i.e. usually by laser beam.

The invention relates specifically to the stage of manufacture of the storage device where indexed tracks or sectors are created. These are necessary so that the data recording and reproducing systems can identify the location of data put into and read out from the storage device. Moreover for high quality performance these indexed tracks or sectors have to be very accurately provided on the storage device.

This manufacture involves separate stages wherein the media is examined (certified) and written to (servo written). Current practice requires separate discrete pieces of equipment to perform these tasks at separate stages of manufacture.

The tasks all require the rotation of the media disc with extreme quality of motion while magnetic or other heads and sensors are moved across the surface with controlled motion, positional relationships and geometry. In this regard there are normally two separate units, one of which, generally referred to as a servo-writer writes the sectors to the disc, and the other, generally referred to as a verifier, reads and verifies the disc.

The aim of this invention is to provide a particularly accurate and simple arrangement for performing these tasks, and accordingly the invention provides a single platform with the ability to carry all the systems required to perform these tasks, particularly to both write and verify the sectors, at one stage within the manufacturing process.

Accordingly one aspect of the invention comprises a single monolithic support platform, a rotary carrier arranged for rotation of a media disc supported on said platform, a write head arranged for substantially radial movement relative to said carrier and for servo writing of data to said media disc and a certifier head arranged for substantially radial movement

relative to said carrier and for verification of the media disc.

For the ultimate in quality of motion all such motion system should be carried on air bearings. In a preferred construction the mountings for all of these air-bearing systems should be a single and solid component incorporating the maximum rigidity providing a common datum for each discrete process.

Accordingly a preferred form of the present invention utilises a single body to carry all the air bearing systems required to perform all the processes needed for the media to be installed in a disc drive or other data storage device. All motion systems thus contained can then be capable of simultaneous operation.

An embodiment in accordance with the invention will now be described, by way of example only.

The single figure shows a perspective view of a combination magnetic disc servowriter and certifier platform.

A common monolithic platform 1 is provided in the form

of a single piece of material integrally forming a base support for three separate air bearing motion systems thereby guaranteeing the positional relationship of each to the media being processed.

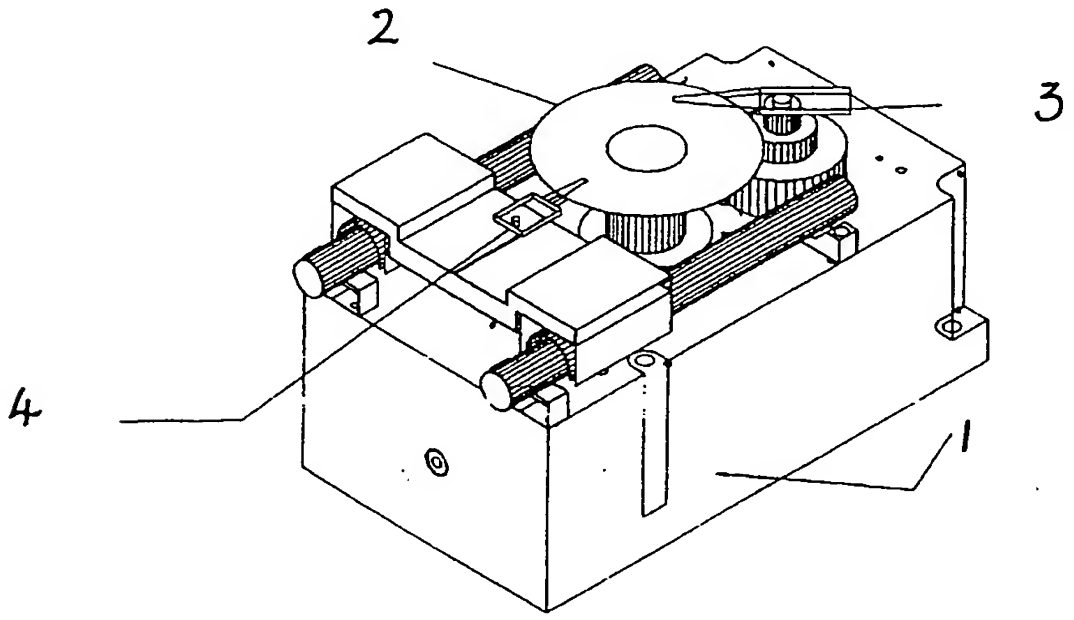
This media in the form of a magnetic disc 2 is mounted on a motorised spindle with integral position feedback and disc clamping.

A servowriting headstack 3 is mounted on a rotary spindle carried by an air bearing and is geometrically positioned in relation to the media spindle so as to mimic the final data storage product take off read-rotation relationship. It is fitted with an integral accurate motion actuator and fittings for a separate position sensor.

A certifier headstack 4 is mounted on a linear air-bearing supported slide with integral linear motor and fittings for a separate position sensor. However, this motion system could also be of rotary design.

In addition, one or more of the motion systems may not be of an air bearing design but some form of mechanical device.

In operation a newly machined and finished disc or stack of discs will be loaded onto the media spindle disc clamp, after which the spindle will spin up to the operating speed. Simultaneously the servowriting and certifier headstacks will start their motion allowing the integrity of the medium to be confirmed and the servo pattern to be written onto the disc. After this process the media will be ready for assembly into a disc drive or other data storage device.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